

CLAIMS

The embodiments of the invention for which an exclusive privilege and property right are claimed are defined as follows:

1. A safe override mechanism for an auto-locking belay device comprising an override means with a pressure sensitive activation means; said override means, when activated, causing the normal intended function of said auto-locking belay device to be overridden thereby allowing a rope to pass quickly through said auto-locking belay device without said auto-locking belay device causing said rope to become locked against further movement; said pressure sensitive activation means causing said override means to become activated only by one of three different pressure levels; low or no pressure exerted on said pressure sensitive activation means preventing the activation of said override means, thereby allowing said auto-locking belay device to perform its normal intended function; intermediate pressure exerted on said pressure sensitive activation means causing said override means to be activated; relatively higher pressure exerted on said pressure sensitive activation means preventing said activation of said override means.
2. The mechanism of claim 1, specifically for use with an auto-locking belay device of the variety containing a cam which rotates on an axle in order to lock said rope, wherein said override means comprises a means to block said rotation of said cam.
3. The mechanism of claim 2 wherein said means to block said rotation of said cam comprises an arm fixedly attached to said axle, said axle being attached to said cam, pressure on said arm preventing movement of said arm, thereby preventing rotation of said axle, thereby preventing rotation of said cam.
4. The mechanism of claim 3 wherein said pressure sensitive activation means comprises a force isolation plate pivotally

mounted on said axle at a point on the opposite side of said arm relative to said cam; said force isolation plate being able to rotate around said axle independent from any rotation of said axle; a hinge mounted on said force isolation plate supporting a lever; said lever being pivotally mounted on said hinge; said hinge acting as a fulcrum for said lever; a lower portion of said lever, below said hinge, being biased by a spring such that in a resting mode an upper portion of said lever, above said hinge, extends over said arm and through the path of rotation of said arm; said pressure sensitive activation means responding differently to each of three pressure levels exerted on said lower portion of said lever as follows:

- a) low or no pressure allowing said lever to slip free from a belayer's hands in an event in which the fall of a climber causes rope forces on an auto-locking belay device to be sufficient so as to cause said cam to rotate; rotation of said cam causing said arm to rotate, rotation of said arm causing said arm to contact said upper portion of said lever thereby causing rotation of said lever along with said force isolation plate, rotation of said lever causing said lever to slip free from said belayer's hands thus allowing said cam to continue to rotate and lock said rope;
- b) intermediate pressure being insufficient to further compress said spring but being sufficient to prevent said lever from slipping free from said belayer's hands in said event in which the fall of a climber causes rope forces on an auto-locking belay device to be sufficient so as to cause said cam to rotate; rotation of said cam causing said arm to rotate until said arm contacts said upper portion of said lever; said lever blocking further rotation of said arm, thereby blocking further rotation of said cam;

c) high pressure being sufficient to further compress said spring thus causing said lever to rotate with respect to said hinge, thus causing said upper portion of said lever to move out of said path of rotation of said arm, thus allowing said arm to rotate unimpeded, thus allowing said cam to rotate unimpeded in said event in which the fall of a climber causes rope forces on an auto-locking belay device to be sufficient so as to cause said cam to rotate, thus allowing said cam to continue to rotate and lock said rope.

5. The mechanism of claim 3 wherein said pressure sensitive activation means comprises a disengagable attachment means for said axle and said cam, a spring, and said arm; said disengagable attachment means comprising a key affixed to said axle and a key slot within a side of said cam; said key able to fit within said key slot; said disengagable attachment means being engaged when said key is within said key slot thus causing said axle to rotate with said cam whenever said cam rotates; said disengagable attachment means being disengaged when said key is not within said key slot thus allowing said cam to rotate around said axle independent from any rotation of said axle; said spring positioned and partially compressed between a surface of said auto-locking belay device and said arm; a force exerted by said spring thus causing said disengagable attachment means to be engaged when no external pressure is exerted on said arm; said pressure sensitive activation means responding differently to each of three pressure levels exerted on said arm as follows:

a) low or no pressure allowing said disengagable attachment means to remain engaged, thus ensuring that said cam and said axle rotate together, thus ensuring that rotation of said cam causes said arm to rotate; said low or no pressure being insufficient to restrain said

arm in an event in which the fall of a climber causes rope forces on said auto-locking belay device to be sufficient so as to cause said cam to rotate; said arm thus slipping free from said belayer's hands, said cam thus continuing to rotate and lock said rope;

b) intermediate pressure being insufficient to further compress said spring but being sufficient to prevent rotation of said arm in an event in which the fall of a climber causes rope forces on said auto-locking belay device to be sufficient such that said cam would rotate were it not restrained from doing so by said intermediate pressure on said arm; said disengagable attachment means remaining engaged being that said intermediate pressure is not sufficient to further compress said spring;

c) high pressure being sufficient to further compress said spring thus causing said disengagable attachment means to become disengaged, thus allowing said cam to rotate independent from said axle thus allowing said cam to lock said rope.